

in saliva. Cortisol is a hormone that has specific correlation to mood management and behavior. Low cortisol levels likely result in a person being in a bad mood and also may have an impact on blood pressure. Currently 1.5 million cortisol tests are performed each year.

5 In some embodiments of the present invention the reaction means of the assay tests of the present invention contains an anti-cortisol antibody (i.e., any immunoglobulin molecule that specifically interacts with cortisol or a unique epitope of cortisol). The reaction site is placed into the mouth to allow binding free cortisol in the saliva to the anti-cortisol antibody. The bound complex is then detected using any  
10 system of method known in the art. In some embodiments, detection requires the use of a detection apparatus. Systems and methods for cortisol detection are described in U.S. Pat. Nos. 5,910,575, and 4,311,690, herein incorporated by reference in their entireties.

## EXAMPLE 1

### 15 Toxicity/Irritation Test

Ten healthy male Golden Syrian Hamsters are assigned to two groups of five animals/group. Group 1 is dosed with aliquots of solution containing the detection assay component at a concentration equivalent that intended for use in the detection assay, as well as, one or more diluted or concentrated samples (e.g., 2, 5, 10, and 100-  
20 fold dilute and concentrated compared to the intended use concentration) and Group 2 is dosed with saline. Prior to study initiation, the left cheek pouch of all animals is abraded using emery paper (everted and three areas of the mucosa abraded with three firm strokes of fine grit emery paper). Only animals with scalar notations of "zero" for erythema and edema for both left and right pouches are used. Following site  
25 preparation, 0.1 ml of the test or placebo is gently applied to the buccal mucosa of the left and right cheek pouch using a 1 cc tuberculin syringe. This procedure is repeated twice daily for four consecutive days and once on the fifth consecutive day. Prior to the first and each subsequent treatment, food particles are cleared from the left and

right cheek pouches with approximately 20 ml of distilled water (room temperature) using a syringe equipped with a 12 gauge, 2 inch long blunt needle covered with rubber tubing. The left and right pouch are everted and examined for cleanliness. If food particles remain, the rise is repeated. The clean everted pouch is examined and scored with the aid of an incandescent high intensity light.

Erythema and edema are scored prior to each treatment and prior to necropsy in the left and right pouch of each animal. The animals are observed once daily for mortality, toxicity and pharmacologic effects. Body weights are recorded pretest and at termination. Following the last observation of day 5, the animals are humanely sacrificed and the left and right pouches are preserved in 10% neutral buffered formalin for histopathologic evaluation. The Group Average Mucosal Irritation Scores are calculated for both intact and abraded pouches.

The following scoring scale is used:

#### **ERYTHEMA & ESCHAR FORMATION**

#### **VALUE**

Natural pink condition of mucosa	0
Well-defined erythema	1
Moderate to severe erythema	2
Severe erythema (beet redness)	3
Loss of color (blanching of mucosal, etc.)	4

#### **EDEMA FORMATION**

#### **VALUE**

Normal condition (note folds in mucosa)	0
Slight edema (edges of area well-defined by definite raising)	1
Moderate edema (area raised approximately 1 mm)	2
Severe edema (raised > 1 mm & extending beyond exposure area)	3
Blistering	4

For each group at each time period, the individual erythema scores are added and the sum divided by the number of scores added to obtain the Group Average

Erythema Score for each time period for the intact and abraded sites. This procedure is repeated using the edema scores to obtain the Group Average Edema Scope for each site at each time period.

For each day, the group average erythema scores for each time period and the group average edema scores for each time period are added and this sum divided by four (4) to obtain the Daily Group Average Mucosal Irritation Score.

In some embodiments, only materials that have an average score of less than two for each of the erythema and edema scores are used in detection assays. Preferably, the average score is less than 1 (i.e., non-toxic, non-irritant). In particularly preferred embodiments, the average score is less than 0.8 or even more preferably, less than 0.5. Any other suitable testing procedure may also be used (See e.g., Toxicology Testing Handbook: Principles, Applications, and Data Interpretation, ed. Jacobson-Kram and Keller, 2001).

All publications and patents mentioned in the above specification are herein incorporated by reference. Various modifications and variations of the described method and system of the invention will be apparent to those skilled in the art without departing from the scope and spirit of the invention. Although the invention has been described in connection with specific preferred embodiments, it should be understood that the invention as claimed should not be unduly limited to such specific embodiments. Indeed, various modifications of the described modes for carrying out the invention which are obvious to those skilled in the relevant fields are intended to be within the scope of the following claims.